REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

REPORT TYPE	3. DATES COVERED (From - To)	
FINAL		
UNITED STATES DEFENSE	5a. CONTRACT NUMBER	
	5b. GRANT NUMBER	
	5c. PROGRAM ELEMENT NUMBER	
	5d. PROJECT NUMBER	
LCDR Daryl Robbin, USN		
Matthews	5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)		
V NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S	
Y NAME(S) AND ADDRESS(ES)	ACRONYM(S)	
	11. SPONSOR/MONITOR'S REPORT	
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
	JNITED STATES DEFENSE TS IN A CHANGING ARCTIC	

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; Distribution is unlimited.

13. SUPPLEMENTARY NOTES A paper submitted to the Naval War College faculty in partial satisfaction of the requirements of the Joint Military Operations Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.

14. ABSTRACT

The strategic 'landscape' of the Arctic region is rapidly changing as a result of the Earth's changing climate. Global warming is causing the Arctic icecap to retreat at an alarming rate. While the retreating icecap may be a sign of man's impact on the environment, it also brings with it the promise of new opportunities. The vast, untapped potential of the Arctic is producing keen international competition in the Arctic. This international competition is a cause for major concern, especially considering the lack of preparedness of the United States military for operations in the Arctic. The United States is significantly lagging behind Russia and all of the other Arctic nations in Arctic capabilities, preparedness, and strategy. In order to meet the emerging challenges in the Arctic, the United States must reevaluate its Arctic strategy and defense organization, while seeking to improve its Arctic capabilities. This paper examines the current United States defense structure and military capability shortfalls in the Arctic. The paper concludes with recommendations to address the various challenges faced by the United States in the Arctic.

15. SUBJECT TERMS

Arctic Region; U.S. Defense Structure

16. SECURITY CLA	ASSIFICATION OF:		_	OF PAGES	19a.NAME OF RESPONSIBLE PERSON Chairman, JMO Dept
	b. ABSTRACT UNCLASSIFIE D	c. THIS PAGE UNCLASSIFIE D			19b. TELEPHONE NUMBER (include area code) 401-841-3556
					Standard Form 298 (Rev. 8-98)

NAVAL WAR COLLEGE Newport, R.I.

ARCTIC DEFENSE CONCERNS: THE NEED TO REORGANIZE UNITED STATES DEFENSE STRUCTURE TO MEET THREATS IN A CHANGING ARCTIC REGION.

by

Daryl Robbin

Lieutenant Commander, USN

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

May 3, 2010

Abstract

Arctic Defense Concerns: The need to reorganize United States defense structure to meet threats in a changing Arctic region. The strategic 'landscape' of the Arctic region is rapidly changing as a result of the Earth's changing climate. Global warming is causing the Arctic icecap to retreat at an alarming rate. While the retreating icecap may be a sign of man's impact on the environment, it also brings with it the promise of new opportunities. The vast, untapped potential of the Arctic is producing keen international competition in the Arctic. This international competition is a cause for major concern, especially considering the lack of preparedness of the United States military for operations in the Arctic. The United States is significantly lagging behind Russia and all of the other Arctic nations in Arctic capabilities, preparedness, and strategy. In order to meet the emerging challenges in the Arctic, the United States must reevaluate its Arctic strategy and defense organization, while seeking to improve its Arctic capabilities. The author examines the current United States defense structure and military capability shortfalls in the Arctic. The paper concludes with recommendations to address the various challenges faced by the United States in the Arctic.

Contents

Introduction	1
International Impacts of Climate Change	2
Current Military Capabilities and Shortfalls	6
U.S. Arctic Policy and Command Relationships	9
Good Neighbors	10
Conclusions	12
Recommendations	16
Final Remarks	17
Notes	19
Bibliography	21

Introduction

The strategic 'landscape' of the Arctic region is rapidly changing as a result of the Earth's changing climate. Global warming is causing the Arctic icecap to retreat at an alarming rate. While the retreating icecap may be a sign of man's impact on the environment, it also brings the promise of new opportunities. Arctic optimists foresee the emergence of new, shorter, and more secure trade routes in the High North.

Additionally, scientists predict that the Arctic contains vast reserves of fossil fuels.

The Arctic is estimated to contain significant deposits of undiscovered petroleum resources.

This veritable fossil fuel 'bonanza' could help to ease some of the world's energy shortfalls and enrich the economies of those nations with the foresight and ability to capitalize on these resources.

The vast, untapped potential of the Arctic is producing keen international competition. This international competition is a cause for major concern, especially considering the lack of preparedness of the United States military for operations in the Arctic. Not only are the United States' forces ill prepared, but the nation also lacks a cohesive command authority responsible for coordinating efforts in this region. The Arctic is vital to the interests of the United States and must be adequately safeguarded. The strategic interests of the United States in the Arctic region can be best protected by incorporating all national efforts under a Joint Interagency Task Force, increasing the level of integration with Canada and the other NATO allies, and consolidating the region under a single Geographic Combatant Command - U.S. Northern Command.

International Impacts of Climate Change

The Earth's average global temperature has been increasing, and global warming is a very real phenomenon. While the underlying causes for global warming remain a highly debated issue, the evidence of this climate change is indisputable. No where is clear evidence of global warming more dramatically visible than in the Arctic.

The Arctic Ocean is melting fast! More precisely, the ice sheets that normally cover the Arctic Ocean are retreating at an alarming rate. In 2008, more than one million square miles of Arctic sea-ice melted, reducing the Arctic icecap to only half the size it was in 1950.² In an effort to determine the rate of ice sheet shrinkage, the National Aeronautics and Space Administration launched its 2009 Characterization of the Arctic Sea Ice Experiment (CASIE). Principal investigator for the CASIE project, James Maslanik stated that the CASIE data ". . . shows that in 2009 the amount of older ice is just 12 percent of what it was in 1988 - a decline of 74 percent. The oldest ice types now cover only 2 percent of the Arctic Ocean as compared to 20 percent in the 1980s."³

Besides the obvious environmental concerns, the shrinking Arctic ice also raises significant international maritime concerns. The retreating Arctic ice is opening up the possibility of new shipping routes via the Northwest Passage (NWP) and the Northern Sea Route (NSR), pictured in Figure 1.

The NWP, a sea route over North America, may provide maritime shipping with a shortcut for trade to and from both coasts of the United States. A voyage from Seattle to Rotterdam via the NWP would be reduced by over 2,000 nautical miles or 20 percent shorter than via the Panama Canal. Likewise, the NSR, a sea route over Eurasia, may provide an even greater shortcut. A voyage from Rotterdam to Yokohama via the NSR would be about



Figure 1 - Northwest Passage and Northern Sea Route. (Source: http://maps.grida.no/go/graphic/arctic-searoutes-northern-sea-route-and-northwest-passage)

4,700 nautical miles shorter than the current route through the Suez Canal, a savings of nearly 40 percent.⁵ While these shipping routes may provide a much shorter and potentially less expensive route for international trade, they present various security concerns for both Canada and Russia.

Canada has a longstanding disagreement with the United States over the status of the waters of the NWP. This dispute stems from Canada's claims that the waters of the NWP are internal waters, and therefore not subject to the conventions of 'innocent passage', while the United States regards the waters as an international strait.⁶ As the waterway becomes more ice-free and a viable shipping route, the United States and Canada will be forced to formally resolve this issue concerning the status of the NWP.⁷ Until this issue is resolved, it is likely that the NWP will remain a potential source of friction between the two great North American allies.

'Gold Rush'

The retreating Arctic ice cap presents another potential benefit and major source of

international tension. The possibility of significant untapped natural resources in the arctic have prompted a veritable international 'Gold-rush' to the northern latitudes. Scientists estimate that the total amount of oil under the Arctic exceeds 90 billion bbl.⁸ The U.S. Geological Survey has estimated that the Arctic contains up to 30 percent of the undiscovered natural gas, 20 percent of the undiscovered natural gas liquids, and 13 percent of the world's undiscovered petroleum resources.⁹ Additionally, it is predicted that the Arctic may contain vast deposits of other valuable geological resources such as nickel, copper, tungsten, lead, zinc, gold, silver, diamonds, manganese, chromium, and titanium.¹⁰

The lure of this potential bonanza of geological resources has captured the attention of many nations, both Arctic and Non-Arctic. As a result of this keen international competition for resources, Arctic nations have begun to focus on building up their military capabilities for operations in the North. Increased Arctic military capabilities are an essential means for Arctic nations to exert control over their northern territories.

In an era of increased international competition for access to the untapped resources contained in the Arctic, the likelihood of an international military confrontation is increased. Fortunately, diplomatic ventures and international conventions have been established to help alleviate some of this tension.

'Silver Lining'

Although significant international tension has developed due to the changing environmental and geopolitical situation, the Arctic could potentially foster a new era of international cooperation. There are numerous international conventions and agreements aimed at promoting peaceful cooperation in the Arctic. These include the Arctic Council and the United Nations Convention on the Law of the Sea.

The Arctic Council, established in 1996, is an intergovernmental forum designed to foster cooperation and collaboration on Arctic issues. ¹¹ It is formally composed of the eight circumpolar states: Canada, Denmark, Finland, Iceland, Sweden, Norway, Russia, and the United States. Although the Arctic Council does not have any actual legal authority, it does provide an international forum for dialogue concerning Arctic issues.

The most pertinent international convention with implications in the Arctic is the United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS was drafted on 10 December 1982 and entered into force on 16 November 1994. It aims to regulate all aspects of the resources of the sea and uses of the ocean. UNCLOS contains a provision which allows any signatory country to petition to extend its exclusive economic zone (EEZ), if it can prove that its continental shelf extends beyond the standard 200 nautical miles EEZ limit. This would allow Arctic states (Canada, Denmark, Norway, Russia, and the United States) to potentially claim vast areas of the Arctic. The United States has signed UNCLOS; however, the U.S. Senate has yet to ratify this convention. The United States cannot make any claims to extend its own Arctic EEZ or protest the claims of other Arctic nations until the U.S. Senate ratifies UNCLOS.

This has led to a dramatic increase in international tension as the other Arctic nations rush toward securing their potential Arctic territories. In his article for *Foreign Affairs*, Scott Borgerson stated that ". . . Arctic powers are fast approaching diplomatic gridlock, and that could eventually lead to the sort of armed brinkmanship that plagues other territories, such as the desolate but resource-rich Spratly Islands, where multiple states claim sovereignty but no clear ownership exists." The bottom line is that even with all of the international cooperation and agreements previously mentioned, an international conflict over the Arctic's

resources remains a not so unlikely scenario.

Current Military Capabilities and Shortfalls

As the world's only viable superpower, the military might of the United States is unparalleled. This military might is one of the underlying factors that makes the United States a dominate force in the international community. So how has the United States been relegated to a subordinate position in matters concerning the Arctic? Although the United States leads the international community as its sole superpower, when it comes to the Arctic, it acts more like a minor power. ¹⁴ In matters concerning the Arctic, the United States is often portrayed as a sleeping elephant, while Russia is an aggressive bear. ¹⁵

Until recently, the United States has largely ignored the Arctic, allowing Russia to take a commanding position toward Arctic military dominance. Russia has not been ignoring the Arctic, in fact, it has been concentrating on increasing its military capabilities to operate in the North. In August 2007, Russian explorer and legislator Artur Chilingarov used a submersible to plant a Russian flag on the North Pole sea floor, stating that ". . . The Arctic is ours." Russia has made claim to an area the size of France and Spain combined; however, it is not yet certain if this claim will be granted. Russia's diplomatic statements and increased Arctic military activity are clear indicators that Russia sees its military strength as vital for securing its national interests in the Arctic. ¹⁷

Russia continues to conduct long range air patrols over the Arctic using its formidable strategic bomber fleet and has also stepped up its other Arctic military activities. Russia's 61st Naval Infantry Brigade and 876th Naval Infantry Battalion are just two units publicly known to specialize in Arctic warfare. Russia continues to operate its powerful and Arctic-capable nuclear submarine fleet, however Russia's real advantage is its unmatched Arctic

surface force.

With 20 operational icebreakers, seven of them nuclear-powered, Russia's Arctic fleet is significantly larger than that of any other nation. In stark contrast to Russia's Arctic icebreaking might, the United States only has 3 icebreakers, with only 2 currently in operating condition. Russian Navy cruisers and destroyers have also resumed periodic Arctic deployments and patrols. In terms of current Arctic capabilities and experience, Russia stands head and shoulders above all other nations. Additionally, Jane's Intelligence Review predicts that Russia will field two additional full-deck aircraft carriers by 2027, for a total of 3 operational carriers. Undoubtedly one of these three will be assigned to the Arctic region, giving Russia unprecedented capacity in the North.

The other Arctic nations clearly see the threat of the 'Russian Bear' in the North and are taking measures to bolster their own Arctic capabilities. Norway plans to spend more than \$100 million constructing a new electronic surveillance system designed to boost her defenses against Russia in the Arctic.²⁰ In August 2009, Norway became the first nation to establish an Arctic Operational Command in the High North. Denmark, also seeking to improve its capabilities, has ordered 48 new combat aircraft and is considering establishing an Arctic Command in Greenland.

Canada is also seeking to significantly increase its Arctic capabilities and presence.

With two new Arctic bases proposed (Resolute Bay army training center and Baffin Island deep water port) and several regularly scheduled Arctic military exercises, Canada is signaling the world that it intends to be a real, growing, and long-term presence in the Arctic.²¹ Canada maintains six operational icebreakers. Additionally, Canada has obligated \$5.7 billion to build eight new Arctic Patrol ships. Canada Command, which is its equivalent

to U.S. Northern Command, has established a standing Joint Task Force NORTH to serve as the command authority for its Arctic territory.²²

The United States is significantly lagging behind Russia and the other Arctic nations in Arctic capabilities, preparedness, and strategy. U.S. Navy oceanographer Rear Admiral Titley remarked that, "The Arctic is changing, and it is changing rapidly. If the Navy does not start looking at this today, we could wake up in seven or eight years and find ourselves way behind the power curve." The 'sleeping elephant' is just now beginning to stir, but is it too late?

The United States military does not routinely operate in the Arctic. Other than long range aerial patrols and nuclear submarine patrols, the United States military presence in the Arctic is practically nonexistent. Currently the U.S. Navy has very limited surface ship experience, very little aviation experience, and diminishing submarine expertise in the Arctic. Additionally, communications in the Arctic are problematic with unreliable high frequency and limited satellite communication coverage above 70 degrees north latitude.²⁴

The U.S. Coast Guard has a fair amount of Arctic experience; however, its capabilities are severely limited, especially with only 2 operational icebreakers. A 2007 National Research Council report estimated that the U.S. icebreaking capability is at risk of being unable to support national interest in the Arctic and Antarctic regions. Even with the degradations to its icebreakers, the U.S. Coast Guard represents the breadth of United States' knowledge about Arctic operations.

U.S. Arctic Policy and Command Relationships

In January 2009, the current United States policy for the Arctic region was published in National Security Presidential Directive (NSPD)-66/ Homeland Security Presidential

Directive (HSPD)-25. This policy outlines the United States' national security interests in the region, such as missile defense and early warning, deployment of sea and air systems for strategic sealift, strategic deterrence, maritime presence, maritime security operations, and ensuring freedom of navigation and overflight.²⁶

In advancing the United States' Arctic interests, NSPD-66/HSPD-25 directs the Departments of State, Defense, and Homeland Security to take the following actions:

Develop greater capabilities and capacities to protect United States borders in the region, increase Arctic maritime domain awareness, preserve global mobility throughout the Arctic, project a sovereign United States maritime presence, and encourage the peaceful resolution of disputes between Arctic nations. Although much work has been conducted towards advancing the United States' Arctic interests, when it comes to military command structures, the realm of the Arctic remains divided.

The Unified Command Plan (UCP) establishes the missions, responsibilities, and geographic areas of responsibility for commanders of combatant commands. Under the UCP, the Arctic is divided between the following three distinct combatant commands: U.S European Command (USEUCOM), U.S Northern Command (USNORTHCOM), and U.S. Pacific Command (USPACOM).²⁷ The current revision of the UCP, while incorporating other significant changes, did not change the geographic combatant command (GCC) boundaries in the Arctic. Figure 2 illustrates the geographical Arctic boundaries for each combatant command. In general, the boundaries between GCCs occur at the water-land interface. This is not the case for the Arctic, where the boundaries for three GCCs are simply anchored on the geographic North Pole. The artificial nature of these boundaries detracts from overall unity of effort in the Arctic region.



Figure 2 - Geographic Combatant Command boundaries. (Source:

http://www.defense.gov/specials/unifiedcommand/images/unified-

GCC areas of responsibility provide the basis for coordination between combatant commanders. Whenever significant operations overlap boundaries, a task force will be formed.²⁸ In the Arctic region there is significant overlap of interests and operations between the various GCCs; however, there has been no task force established in the Arctic. This poses a potential command and control (C2) and basic coordination problem for operations in the Arctic.

Good Neighbors

For more than 70 years the United States and Canada have enjoyed a close and mutually beneficial relationship. The close geographic, economic, and military ties between the two nations have helped each to prosper and strengthen its own national security.

Recently, the changing Arctic environment has been a source of tension between the two nations. Differences of opinion in the status of the Northwest Passage have placed a strain on this historically close relationship.

Although this longstanding dispute remains unresolved, the United States and Canada continue to benefit from their relationship and substantial cooperation. USNORTHCOM and

North American Aerospace Defense Command (NORAD) Commander, Air Force General Renuart's remarks on the Northwest Passage dispute shows the strength of the relationship. General Renuart remarked, "I think that the nations are moving closer to agreement on that, but on all other defense-related issues, there is no daylight between the two countries."²⁹

Military cooperation between the United States and Canada has been a cornerstone of North American defense. No where is this more evident than in NORAD. NORAD is a binational military organization responsible for the aerospace and maritime defense of the United States and Canada. It was created in 1958 and has since served as a foundation for close military cooperation between the United States and Canada. This close military relationship is also readily applicable in the Arctic and could be leveraged to mitigate the capability shortfalls of both partners.

The United States' and Canada's other key strategic partner is the North Atlantic Treaty Organization (NATO). NATO is a military and strategic defense alliance of 28 countries from North America and Europe. Established in 1949, NATO remains a bastion of international cooperation and collective defense. Four of the five Arctic nations share NATO membership, Canada, Denmark, Norway, and the United States. It is therefore inevitable that NATO should have a role in the Arctic.

In May 2009, the Norwegian Deputy Minister of Defense, Espen Barth Eide, remarked to the NATO Parliamentary Assembly that NATO should increase its role in the High North. Eide stated that, "NATO is at the core of the security and defense strategies of all but one Arctic state, and therefore, cannot avoid defining its role in the Arctic." Eide also called for an increase in NATO's profile in the Arctic as a means to demonstrate collective solidarity. While NATO seeks to establish its role in the Arctic, Eide warns that it

must also be aware of Russia's interests and strive to promote international cooperation in the Arctic.³¹ NATO's strength and the close relationship of its Arctic members provide a key opportunity for the alliance to leverage their collective Arctic capabilities to promote peace and stability throughout the Arctic region.

Conclusions

In examining the Arctic policy and capabilities of the United States, it is apparent that a whole of government approach is necessary. Unity of effort and strategic vision are needed to safeguard the vital interests of the United States in the Arctic region. Small steps have already been taken to move toward this unity of effort; however, many more are needed. A single command authority is needed to effectively coordinate efforts in establishing Arctic Maritime Domain Awareness (AMDA) and defending the nation's interests in the Arctic. Additionally, to enhance its overall Arctic capabilities, the United States must coordinate and consolidate its Arctic efforts with those of its closest allies.

Some might suggest that the United States does not need to establish a single command authority in the Arctic as the Arctic Council serves as an organization to promote peaceful cooperation between Arctic nations. Cooperation in the Arctic is in the best security interest of all nations. Additionally, the fact that four of the five major Arctic nations are NATO members, will serve to promote cooperation and stability within the Arctic region. Finally, there is already close coordination between USNORTHCOM, USEUCOM, and USPACOM on Arctic concerns. Therefore, establishment of a single GCC is not required.

Unfortunately, the Arctic Council is only a political body and does not have a means to address security concerns. During the deliberations that formed the Arctic Council, the United States was adamant that the organization should not discuss national security issues.³²

There is no overarching international organization that has any legal authority or mandate over the conduct of nations in the Arctic.

Additionally, the current arrangement between the three GCCs responsible for the Arctic AOR is not sustainable. While this arrangement was adequate when the Arctic was ice-covered and inaccessible, it is not sufficient now that the region has become a vital interest. With the limited Arctic capabilities of the United States, it is critically important that its Arctic efforts are efficiently coordinated to maximize its power in the Arctic. The limited means of the United States in the Arctic make it crucial that every action is sufficiently nested within the overall national Arctic strategy.

Consolidating the Arctic region under a single GCC would also provide better clarity in determining the capability requirements for the region. This improved clarity in capability requirements would allow the military services to more effectively manage their acquisitions and program processes. Some examples of Arctic capability shortfalls that might be addressed are the need for improved high-latitude communications networks, advanced icestrengthened surface combatants, and improved icebreaker designs. As opposed to multiple 'competing' GCCs, a single GCC would be a more effective advocate for the development and acquisition of such regionally specific capabilities.

Many will argue that USEUCOM would be the best choice as a single GCC over the Arctic region. The strategic importance of USEUCOM is evident as its primary mission is to conduct military operations, international military partnering, and interagency partnering to enhance transatlantic security and defend the United States forward; seeking to promote stability and peace throughout Europe and Eurasia. USEUCOM's close and enduring relationship with NATO, coupled with its longstanding diplomatic relationships with Russia,

make it a viable option as the Arctic GCC.

USEUCOM routinely conducts and participates in joint NATO exercises. One such exercise, the Norwegian led Battle Griffin, is a triennial joint amphibious and field exercise that takes place in the northern latitudes.³⁴ One particular focus of this exercise is cold weather and rough terrain training, similar to typical conditions found throughout the Arctic. With four of the five Arctic nations as NATO members, USEUCOM is in a key position to continue to foster this NATO cooperation in the Arctic.

Russia, the only Arctic nation that is not a NATO member, poses the greatest threat to international stability in the Arctic. With its unique focus on Russia, USEUCOM is best suited to counter or contain any Russian aggression in the Arctic. While military action in the Arctic does not currently seem very likely, USEUCOM's established diplomatic ties with Russia and close working relationship with NATO make it a good candidate for sole GCC of the Arctic region.

While a significant concern, military conflict is not the most likely threat in the Arctic. The threat posed by the possibility of both state and non-state actors infringing on the sovereign rights and territorial claims of other nations, is much more likely. A more sinister threat in the Arctic is posed by international terrorism, to include economic and environmental terrorism. A key to reducing these threats is the ability to accurately monitor, identify, and track vessels operating in the Arctic.

Arctic Maritime Domain Awareness is vital for monitoring traffic in the Arctic and for safeguarding the nation. USNORTHCOM Commander General Renuart noted that more ice-free water means more transit routes and more vessels in Arctic waters, significantly increasing the task of USNORTHCOM and U.S. allies to accurately identify and track

vessels in Arctic.³⁵ In an interview with *Inside the Pentagon*, Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs Paul Stockton stated that it is crucial that we "... have an understanding of what kinds of gaps might be emerging in all-domain awareness in the Arctic." Mr. Stockton went on to say that we need to determine "... how and whether we might extend the NORAD mission in maritime warning in ways to meet genuine requirements for both Canada and the United States to meet our shared security challenges." ³⁷

As a complementary command to USNORTHCOM, NORAD is ideally suited to coordinate the binational efforts of Canada and the United States in the Arctic. One means to facilitate the expansion of NORAD's duties with regard to AMDA is the creation of a North American Combined Arctic Command (NORCAC). NORCAC would operate under the current construct of NORAD and would serve to combine the capabilities of both Canada and the United States for common defense and AMDA.

USNORTHCOM's current mission is to anticipate and conduct Homeland Defense and Civil Support operations within the assigned area of responsibility to defend, protect, and secure the United States and its interests.³⁸ To accomplish this wide ranging mission, USNORTHCOM leverages the capabilities and assets of a multitude of organizations and agencies by coordinating all efforts under a Joint Interagency Coordination Group (JIACG). Some of these key agencies are NORAD, Department of State, Department of Homeland Security, Department of Health and Human Services, Department of Transportation, Central Intelligence Agency, Federal Bureau of Investigation, and U.S. Geological Survey. In total there are over 40 agencies resident in USNORTHCOM's JIACG.³⁹ This interagency coordination is crucial to maximize a whole of government effort in combatting the wide

ranging challenges of the Arctic region.

Finally, a Joint Interagency Task Force (JIATF) in the Arctic would provide USNORTHCOM with a fully integrated, international task force organized to capitalize on the force multiplier effect of the various agencies and countries involved. This would provide USNORTHCOM with the necessary means to consolidate the AMDA mission as a key competency. This focus on AMDA makes USNORTHCOM the best choice for sole GCC of the Arctic region.

Recommendations

To coordinate all United States efforts in the Arctic, a JIATF ARCTIC is needed.

JIATF ARCTIC is necessary to effectively leverage all elements of national power in the region. JIATF ARCTIC will allow the United States to take a whole of government approach in the Arctic, provide unity of effort, and maximize United States capabilities in the Arctic.

The United States must revitalize its close relationship with its long term NATO allies in the Arctic. Even after the fall of the Soviet Union, NATO remains a relevant and capable military organization. With four of the five Arctic nations as member nations, NATO will provide a stabilization and security presence as competition heats up in the Arctic.

The common interests of the United States and Canada far outweigh the differences.

The United States and Canada would both benefit from the development of NORCAC.

NORCAC would serve to combine the capabilities of both nations for common defense and AMDA.

Finally, the United States should consolidate the Arctic region under

USNORTHCOM as the sole GCC. USNORTHCOM would provide the best fit to coordinate the capabilities of both NORCAC and JIATF ARCTIC. With the combined capabilities of NORAD, NORCAC, and JIATF ARCTIC, USNORTHCOM would be ideally suited to protect the United States' borders in the Arctic region, increase Arctic maritime domain awareness, preserve global mobility throughout the Arctic, project a sovereign United States maritime presence, and encourage the peaceful resolution of disputes between Arctic nations. These actions would not only meet the directives of NSPD-66/HSPD-25, but would also safeguard the security and vital interests of the United States in the Arctic.

Final Remarks

The Arctic region is critically important to the strategic interests of the United States. There must be a whole of government approach to securing our vital interests in the Arctic, even if this means increased cooperation with other nations. In fact, it serves the United States' best interests to increase the level of international cooperation in the Arctic, further promoting security and stability.

All of the United States' efforts in the Arctic must be coordinated under a single GCC. USNORTHCOM provides the perfect structure to consolidate national interagency efforts and coordinate international efforts. Effectively managing and leveraging the shared international efforts and interest of our Arctic partners is the key to stability and prosperity in the Arctic region.

Notes

¹ Alan Petzet, "The unexplored Arctic," Oil & Gas Journal 106 no. 29 (August 2008): 17.

³ Arctic Focus website, "NASA flight studies Arctic ice" (22 July 2009),

http://arcticfocus.com/2009/07/22/nasa-flight-studies-arctic-ice/, (accessed 17 March 2010).

⁴ Donna J. Nincic, "Sea Lane Security and U.S. Maritime Trade: Chokepoints as Scarce Resources," Globalization and Maritime Power, Sam J. Honolulu: University Press of the Pacific, 2004, 152.

Borgerson, "Arctic Meltdown," 66.

⁶ Charles K. Ebinger and Evie Zambetakis, "The Geopolitics of Arctic Melt," International Affairs (London)

no. 6 (2009): 1221.

' Ibid., 1221.

⁸ Petzet, "The unexplored Arctic." 17.

¹⁰ Linda Jakobson, "China Prepares for an Ice-Free Arctic," SIPRI Insights on Peace and Security no. 2010/2 (March 2010). ¹¹ Ibid.

- ¹² Ebinger and Zambetakis, "Geopolitics of Arctic Melt." 1224-1226.
- ¹³ Borgerson, "Arctic Meltdown," 68.

14 Hubert, "Polar Frontiers," 3.

- ¹⁵ Bob Reiss, "Cold, Hard Facts: U.S. Trails in race for the top of the world," *PoliticsDaily.com* (March 13, 2010): http://ebird.osd.mil/ebfiles/e20100314739812.html (accessed 14 March 2010).
- ¹⁷ Gerard O'Dwyer, "Norway plans surveillance system," *Defense News* (June 16, 2008): http://proquest.umi.com (accessed 22 February 2010).
- ¹⁸ John Patch, "Cold Horizons: Arctic maritime security challenges," United States Naval Institute. Proceedings 135 no. 5 (May 2009): 49.
- ¹⁹ Mark Galeotti, "Cold calling Competition heats up for Arctic resources," Jane's International Review (September 18, 2008): http://search.janes.com (accessed 23 February 2010). O'Dwyer, "Norway plans surveillance system." 54.
- ²¹ Patch, "Cold Horizons." 50.

²² Ibid.

- Navy Times, "Weighing a real cold war," Navy Times (February 8, 2010) http://proquest.umi.com (accessed 16 March 2010).
- ²⁴ Jane's Information Group, "Shrinking ice cover creates opportunities and threats," Jane's Navy International (December 2008): http://search.janes.com. (accessed 22 March 2010).

 25 National Research Council, *Polar icebreakers in a changing world, an assessment of U.S. needs.*

Washington, DC. National Academic Press, 2007, 2

- ²⁶ U.S. President, *Arctic Region Policy*, *NSPD-66/HSPD-25*, Washington, DC: White House, 12 January 2009.
- ²⁷ U.S. President, *Unified Command Plan*. Washington, DC: The White House, 23 December 2008. (FOUO).

²⁸ Ibid.

- ²⁹ Marina Malenic, "U.S. Military Wants Fresh Look At Arctic Policy," *Defense Daily* 240, no. 53 (December 2008): http://proquest.umi.com (accessed 16 March 2010).
- 30 "NATO Parliamentary Assembly discusses alliance role in High North." *Defense Daily International*. (May 29, 2009). http://www.lexisnexis.com (accessed 23 February 2010).

³¹ Ibid.

- ³² Ebinger and Zambetakis, "Geopolitics of Arctic Melt." 1226.
- ³³ United States European Command Web site, "Mission and Vision,"

http://www.eucom.mil/english/MissionAndVision.asp, (accessed 23 April 2010).

² Scott G. Borgerson, "Arctic Meltdown; The Economic and Security Implications of Global Warming," Foreign Affairs 87, no. 2 (March/April 2008), 63.

(accessed 23 April 2010). ³⁵ John T. Bennett, "Renuart: New president faces cyber, Arctic threats." *Defense News.* (August 20, 2009). http://www.defensenews.com/story.php?i=3684947. (accessed 23 April 2010).

United States Northern Command Web site, "About USNORTHCOM," http://www.northcom.mil/About/index.html. (accessed 23 April 2010).

³⁴ GlobalSecurity.org Web site, "Battle Griffin," http://www.globalsecurity.org/military/ops/battle-griffin.htm,

³⁶ Christopher J. Castelli, "DOD, Canada aim to develop Arctic policy by early 2010," *Inside Defense* (December 3, 2009). http://www.insidedefense.com. (accessed 23 April 2010). ³⁷ Ibid.

³⁹ U.S. Senate Armed Services Committee, Statement of General Victor E. Renuart, Jr., USAF Commander United States Northern Commnad and North American Aerospace Defense Command before the Senate Armed Services Committee, 111th cong., 1st sess., 2009, 33.

40 GlobalSecurity.org Web site, "Joint Interagency Task Force."

http://www.globalsecurity.org.miltary/agency/dod/jitf.htm, (accessed 23 April 2010).

Bibliography

- Arctic Focus website. "NASA flight studies Arctic ice." (22 July 2009), http://arcticfocus.com/2009/07/22/nasa-flight-studies-arctic-ice/, (accessed 17 March 2010).
- "Arctic Ice Continues To Dwindle: NASA." *Space & Missile Defense Report*, 32 no. 14 (April 2009). http://www.proquest.umi.com (accessed 22 March 2010).
- Baird, Patrick D. The Polar World. New York, NY: John Wiley & Sons Inc, 1964.
- Bennett, John T. "Renuart: New president faces cyber, Arctic threats." Defense News. (August 20, 2009). http://www.defensenews.com/story.php?i=3684947. (accessed 23 April 2010).
- Boggs, Samuel W. *The Polar Regions: Geographical and historical data for consideration in a study of claims to sovereignty in the Arctic and Antarctic regions*. Buffalo, NY: William S. Hein & Co., Inc, 1990.
- Borgerson, Scott G. "Arctic Meltdown; The Economic and Security Implications of Global Warming." *Foreign Affairs* 87, no. 2 (April 2008): http://proquest.umi.com (accessed 22 March 2010).
- Bowes, Michael D. *Impact of Climate Change on Naval Operations in the Arctic.* Center for Naval Analysis Report CAB D0020034.A3/1REV (Alexandria, VA: CNA, April 2009).
- Briggs, Phillip J. "The Polar Sea Voyage and the Northwest Passage Dispute." *Armed Forces & Society* 16, no 3 (Spring 1990), 437-452.
- Burgess, Richard R. "The New Cold War?" Seapower, (October 2007): 15-18.
- Castelli, Christopher J. "DOD, Canada aim to develop Arctic policy by early 2010," Inside Defense (December 3, 2009). http://www.insidedefense.com. (accessed 23 April 2010).
- Chavanne, Bettina H. "U.S. Navy Develops Arctic Roadmap." *Aerospace Daily & Defense Report* 231 no 58 (December 23, 2009): 5.
- Defense.gov Web site. "Geographic Combatant Command boundaries." http://www.defense.gov/specials/unifiedcommand/images/unified-command_world-map.jpg (accessed 2 March 2010).
- Ebinger, Charles K. and Evie Zambetakis. "The geopolitics of Arctic melt." *International Affairs* (London) 85, no. 6 (2009): 1215-1232.

- Elliot-Meisel, Elizabeth. "Politics, Pride, and Precedent: The United States and Canada in the Northwest Passage." *Ocean Development & International Law* 40 no. 2 (2009): 204-232.
- Frank, Morning. "In Orbit." *Aviation Week & Space Technology* 163 no. 15 (October 2005): 17.
- Galeotti, Mark. "Cold calling Competition heats up for Arctic resources." Jane's International Review (September 18, 2008): http://search.janes.com (accessed 23 February 2010).
- Gillis, Matthew. "A New Era or the Great White Norm?" *Canadian Naval Review* 5 no. 4 (Winter 2010): 4-10.
- GlobalSecurity.org Web site, "Battle Griffin," http://www.globalsecurity.org/military/ops/battle-griffin.htm, (accessed 23 April 2010).
- GlobalSecurity.org Web site, "Joint Interagency Task Force." http://www.globalsecurity.org.miltary/agency/dod/jitf.htm, (accessed 23 April 2010).
- Gove, David. "Arctic Melt: Reopening a Naval Frontier?" *United States Naval Institute. Proceedings* 135 no. 2 (February 2009): 16-22.
- Gray, Colin S. "Canada and NORAD: A Study in Strategy." *Canadian Institute International* 31 no. 3-4 (June 1972): http://proquest.umi.com (accessed 16 March 2010).
- Hanna, Magda. "In The Dark and Out In The Cold." *United States Naval Institute. Proceedings* 132 no. 6 (June 2006): 46-52.
- Hilburn, Matt. "Trans-Arctic Shipping?" Seapower (August 2008): 34-36.
- Huebert, Bob. "Polar Frontiers." *Armed Forces Journal* (March 2010): http://proquest.umi.com (accessed 22 March 2010).
- International Maritime Organization. *International Maritime Organization Guidelines for Ships Operating in Arctic Ice-covered Waters*. (December 2002): http://www.imo.org/safety/mainframe.asp?topic_id=1787. (accessed 22 March 2010).
- Jane's Information Group. "Shrinking ice cover creates opportunities and threats." *Jane's Navy International* (December 2008): http://search.janes.com. (accessed 23 February 2010).
- Jakobson, Linda. "China Prepares for an Ice-Free Arctic." SIPRI Insights on Peace and Security no. 2010/2. Solna, Sweden, March 2010.
- Jockel, Joseph T. "The US Navy, Maritime Command, and the Arctic." *Canadian Defence Quarterly* 19, no. 3 (December 1989): 23-32.

- ——. *No Boundaries Upstairs*. Joseph T. Jockel. Vancouver: University of British Columbia Press, 1987.
- Malenic, Marina. "U.S. Military Wants Fresh Look At Arctic Policy." *Defense Daily* 240, no. 53 (December 2008): http://proquest.umi.com (accessed 16 March 2010).
- Moeller, Robert T. and Mary C. Yates. "The Road to a New Unified Command." *Joint Forces Quarterly* no. 51 (4th Quarter 2008): 67-73.
- Mugridge, Dave. "Could 2010 See Canada's Navy Rise Like a Phoenix?" *Canadian Naval Review* 5 no. 4 (Winter 2010): 2-3.
- National Research Council. *Polar icebreakers in a changing world, an assessment of U.S. needs.* Washington, DC: National Academic Press, 2007.
- "NATO Parliamentary Assembly discusses alliance role in High North." *Defense Daily International*. (May 29, 2009). http://www.lexisnexis.com (accessed 23 February 2010).
- O'Dwyer, Gerald. "Norway Plans Surveillance System." Defense News (June 16, 2008): http://proquest.umi.com (accessed 22 February 2010).
- ——. "Russia Warns Denmark Over Arctic Arms Race." *Defense News* (August 3, 2009): 13.
- Omestad, Thomas. "The Race for the Arctic; As the ice melts, nations eye oil and gas deposits and shipping routes." *U.S. News & World Report* 145 no 8. (October 2008): 53-56.
- Patch, John. "Cold Horizons: Arctic Maritime Security Challenges." *United States Naval Institute. Proceedings* 135, no. 5 (May 2009): 48-55.
- Petzet, Alan. "Russia's oil supply outlook." Oil & Gas Journal 103 no. 32 (August 2005): 17.
- ——. "Shale finds muddle Arctic development timing." *Oil & Gas Journal* 107 no. 40 (October 2009): 21-22.
- ——. "The unexplored Arctic." *Oil & Gas Journal* 106 no. 29 (August 2008): 17. Reiss, Bob. "Cold, Hard Facts: U.S. Trails in race for the top of the world." *PoliticsDaily.com* (March 13, 2010): http://ebird.osd.mil/ebfiles/e20100314739812.html (accessed 14 March 2010).
- Rutherford, Emelie. "Senate Poised To Boost Coast Guard Icebreaker Funds, Looks To Arctic Needs." *Defense Daily* 243 no 6, (July 9, 2009): http://proquest.umi.com (accessed 16 March 2010).

- Scurro, Andrew. "Melting Arctic forces fleet to look North." *Navy Times* (March 2, 2009): 12.
- Snook, Ray. "Arctic Diplomacy: A Chance for Canada to Shine." *Canadian Naval Review* 5 no. 4 (Winter 2010): 29-30.
- United Nations. United Nation Convention on the Law of the Sea of 10 December 1982. Montego Bay, Jamaica: United Nations, December 1982.
- United Nations Environmental Program Web site. "Northwest Passage and Northern Sea Route." http://maps.grida.no/go/graphic/arctic-sea-routes-northern-sea-route-and-northwest-passage, (accessed 2 March 2010).
- United States European Command Web site. "Mission and Vision," http://www.eucom.mil/english/MissionAndVision.asp, (accessed 23 April 2010).
- United States Northern Command Web site. "About USNORTHCOM," http://www.northcom.mil/About/index.html. (accessed 23 April 2010).
- U.S. President. *Unified Command Plan*. Washington, DC: The White House, 23 December 2008. (FOUO).
- U.S. President. *Arctic Region Policy, NSPD-66/HSPD-25*. Washington, DC: White House, 12 January 2009.
- U.S Senate Armed Services Committee, Statement of General Victor E. Renuart, Jr., USAF Commander United States Northern Command and North American Aerospace Defense Command before the Senate Armed Services Committee, 111th cong, 1st sess., 2009, 33.
- "Weighing a real cold war." *Navy Times*, (February 8, 2010). http://proquest.umi.com (accessed 16 March 2010).
- Zellen, Barry. "An ice-free boom; Global warming alarmists never take time to consider that an ice-free Arctic would provide benefits." *Financial Post*. (October 28, 2009): http://www.lexisnexis.com (accessed 23 February 2010).